



results of **BLAST**

BLASTP 2.2.1 [Apr-13-2001]

Reference:

Altschul, Stephen F., Thomas L. Madden, Alejandro A. Schäffer, Jinghui Zhang, Zheng Zhang, Webb Miller, and David J. Lipman (1997), "Gapped BLAST and PSI-BLAST: a new generation of protein database search programs", Nucleic Acids Res. 25:3389-3402.

RID: 999712079-18579-9967

Query=

(17 letters)

Database: nr

751,829 sequences; 239,148,882 total letters

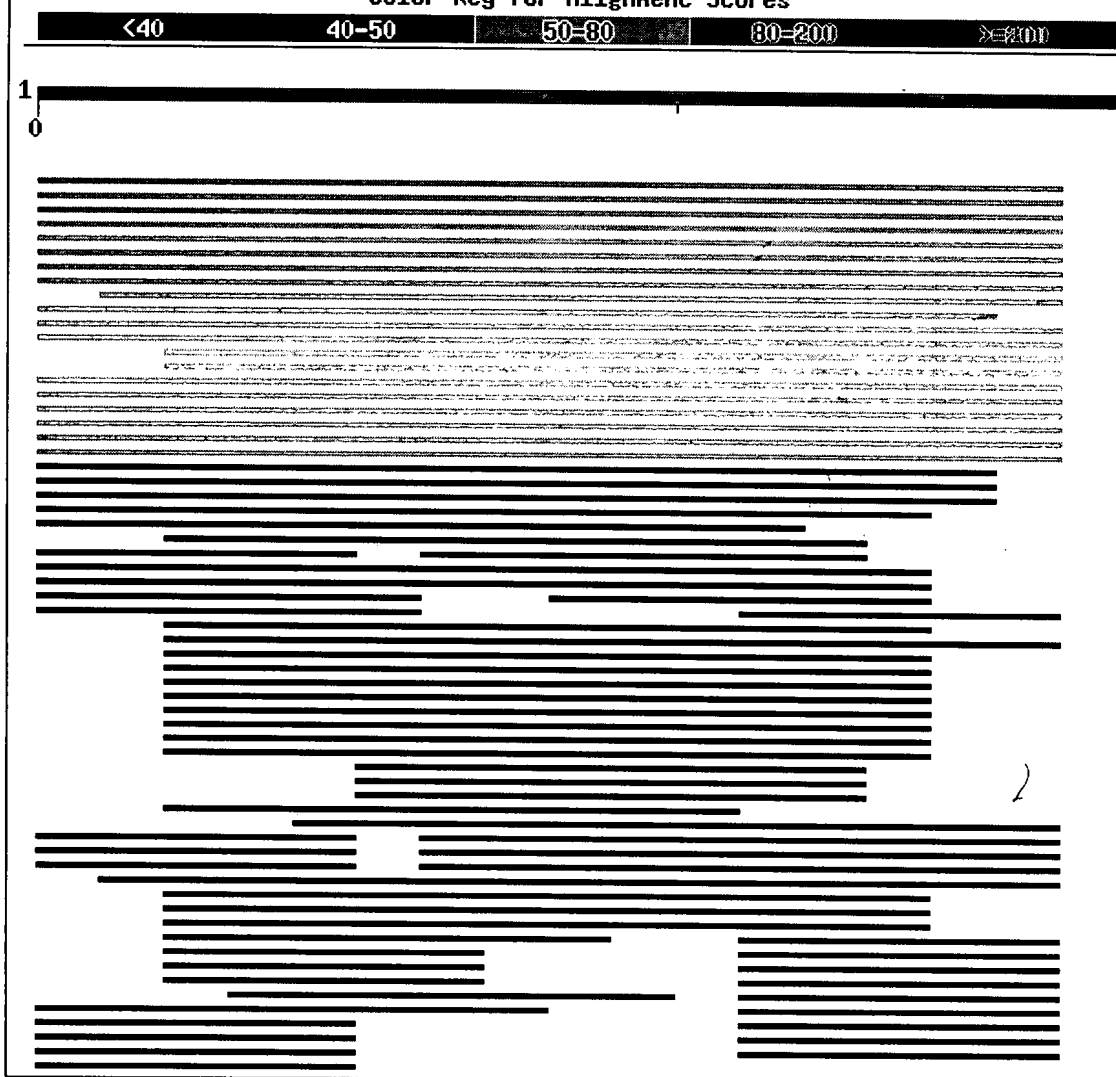
If you have any problems or questions with the results of this search please refer to the [BLAST FAQs](#)

[Taxonomy reports](#)

Distribution of 525 Blast Hits on the Query Sequence

Mouse-over to show defline and scores. Click to show alignments

Color Key for Alignment Scores



Sequences producing significant alignments:

Score E
(bits) Value

gi 1942097 pdb 1ZWB	Structure Of Human Parathyroid Horm...	60	2e-09
gi 13124462 sp Q9XT35 PTH MACFA	PARATHYROID HORMONE PRECURS...	60	2e-09
gi 11513553 pdb 1FVY A	Chain A, Solution Structure Of The O...	60	2e-09
gi 6980561 pdb 1BWV	The Solution Structure Of Human Par...	60	2e-09
gi 209186 gb AAA73011.1	(M64271) parathyroid hormone [synt...	60	2e-09
gi 10120514 pdb 1ET1 A	Chain A, Crystal Structure Of Human ...	60	2e-09
gi 1065314 pdb 1HPH	Human Parathyroid Hormone Fragment ...	60	2e-09
gi 4506267 ref NP_000306.1	parathyroid hormone [Homo sapie...	60	2e-09
gi 1942099 pdb 1ZWD	Structure Of Human Parathyroid Horm...	57	2e-08
gi 7416876 gb AAF62347.1 AF134233	1 (AF134233) parathyroid ...	55	6e-08
gi 10181174 ref NP_065648.1	parathyroid hormone; parathyro...	55	8e-08
gi 14485761 gb AAK63071.1 AF382952	1 (AF382952) parathyroid...	55	8e-08
gi 1942100 pdb 1ZWE	Structure Of Human Parathyroid Horm...	54	1e-07
gi 2392655 pdb 1ZWF	Structure Of N-Terminal Acetylated ...	54	1e-07
gi 229314 prf 1701028A	parathyrin [Bos taurus]	52	5e-07
gi 131548 sp P01269 PTHY PIG	PARATHYROID HORMONE PRECURSOR ...	52	5e-07
gi 1942098 pdb 1ZWC	Structure Of Bovine Parathyroid Hor...	52	5e-07
gi 163647 gb AAA30749.1	(K01938) preproparathyroid hormone...	52	5e-07

gi 131545 sp P01268 PTHY BOVIN PARATHYROID HORMONE PRECURSO...	52	5e-07
gi 1709894 sp P52212 PTHY CANFA PARATHYROID HORMONE PRECURS...	52	5e-07
gi 8394100 ref NP 058740.1 parathyroid hormone [Rattus nor...	50	2e-06
gi 2118603 pir I51851 parathyroid hormone - rat (fragment)...	48	9e-06
gi 11119195 gb AAG30545.1 AF309967 1 (AF309967) preproparat...	47	1e-05
gi 2624852 pdb 1HTH The Solution Structure Of Cyclic Hu...	41	0.001
gi 131546 sp P15743 PTHY CHICK PARATHYROID HORMONE PRECURSO...	38	0.010
gi 7470836 pir S77521 sensory transduction histidine kinas...	30	2.1
gi 13470534 ref NP 102102.1 hypothetical protein [Mesorhiz...	27	16
gi 14161109 emb CAC39205.1 (AJ250859) tyrosine kinase rece...	27	22
gi 116054 sp P28583 CDPK SOYBN CALCIUM-DEPENDENT PROTEIN KI...	27	22
gi 12740197 ref XP 008270.2 hypothetical protein FLJ10970 ...	27	22
gi 8922796 ref NP 060756.1 hypothetical protein FLJ10970 [...	27	22
gi 7297366 gb AAF52626.1 (AE003620) CG8222 gene product [D...	27	22
gi 1084335 pir S46284 calcium-dependent protein kinase (EC...	26	29
gi 8778378 gb AAF79386.1 AC007887 45 (AC007887) F1504.8 [Ar...	26	29
gi 7287842 gb AAF44880.1 AE003406 85 (AE003416) symbol=osp;...	26	29
gi 15289760 dbj BAB63464.1 (AB051809) calcium dependent pr...	26	29
gi 7498766 pir T32492 hypothetical protein F09G2.1 - Caeno...	26	29
gi 14330441 emb CAC41023.1 (AJ318077) calcium-dependent/ca...	26	29
gi 14330419 emb CAC41003.1 (AJ312239) calcium-dependent/ca...	26	29
gi 7287843 gb AAF44881.1 AE003406 86 (AE003416) short varia...	26	29
gi 15219693 ref NP 174807.1 calcium-dependent protein kina...	26	29
gi 15233947 ref NP 192695.1 calmodulin-domain protein kina...	26	29
gi 7298166 gb AAF53402.1 (AE003644) osp gene product [Dros...	26	29
gi 7434370 pir T08873 calcium-dependent protein kinase (EC...	26	29
gi 7303973 gb AAF59016.1 (AE003835) CG13745 gene product [...	26	39
gi 7287808 gb AAF44846.1 AE003406 51 (AE003416) hypothetica...	25	53
gi 12656268 gb AAK00808.1 (AF274591) leucine-rich repeat-c...	25	53
gi 7672708 gb AAF66608.1 AF142343 1 (AF142343) glycoprotein...	25	53
gi 13486645 dbj BAB39883.1 (AP002882) hypothetical protein...	25	53
gi 7387949 sp O78711 NU1M SARHA NADH-UBIQUINONE OXIDOREDUCT...	25	53
gi 15224978 ref NP 181425.1 putative calcium-dependent pro...	25	71
gi 14768891 ref XP 036030.1 lethal giant larvae (Drosophil...	25	71
gi 7428005 pir T03263 calcium-dependent protein kinase (EC...	25	71
gi 13128939 ref NP 077029.1 recombinase [Bacillus sp. B-3]...	25	71
gi 9187975 emb CAB97127.1 (AJ277590) inositol 1,4,5-trisph...	25	71
gi 15228350 ref NP 187677.1 calmodulin-domain protein kina...	25	71
gi 11499331 ref NP 070570.1 hypothetical protein [Archaeog...	25	71
gi 13507962 ref NP 109911.1 HPr(Ser) kinase [Mycoplasma pn...	25	71
gi 4758680 ref NP 004515.1 lethal giant larvae (Drosophila...	25	71
gi 15238353 ref NP 196107.1 calcium-dependent protein kina...	25	71
gi 7434364 pir T09940 calcium-dependent protein kinase (EC...	25	71
gi 14132794 gb AAK52346.1 (AY033650) lethal giant larvae-l...	25	71
gi 14768884 ref XP 036029.1 lethal giant larvae (Drosophil...	25	71
gi 7505644 pir T23539 hypothetical protein K09C8.1 - Caeno...	24	95
gi 4731229 gb AAD28395.1 (AF110622) NADH dehydrogenase sub...	24	95
gi 6063536 dbj BAA85396.1 (AP000615) ESTs C22369(C12239),C...	24	95
gi 1362190 pir S56717 calcium-dependent protein kinase (EC...	24	95
gi 7428003 pir S71770 calcium-dependent protein kinase (EC...	24	95
gi 15227805 ref NP 179321.1 putative calmodulin-domain pro...	24	95
gi 3128247 gb AAC23443.1 (AF008115) N-acetylglutamate synt...	24	95
gi 7428004 pir T03271 calcium-dependent protein kinase (EC...	24	95
gi 12039322 gb AAG46110.1 AC073166 8 (AC073166) calcium-dep...	24	95
gi 1705733 sp P53682 CDP1 ORYSA CALCIUM-DEPENDENT PROTEIN K...	24	95
gi 1705735 sp P53684 CDP3 ORYSA CALCIUM-DEPENDENT PROTEIN K...	24	95
gi 7428007 pir T02784 calcium-dependent protein kinase (EC...	24	95
gi 2129555 pir S71775 calcium-dependent protein kinase 9 -...	24	95
gi 14330443 emb CAC41024.1 (AJ318078) calcium-dependent/ca...	24	95
gi 7467620 pir B71677 histidine kinase sensor protein (bar...	24	95
gi 10944296 dbj BAB16888.1 (AB042550) OsCDPK7 [Oryza sativa]	24	95
gi 2944385 gb AAC05270.1 (AF048691) calcium dependent prot...	24	95
gi 15236966 ref NP 195257.1 calmodulin-domain protein kina...	24	95
gi 8953946 gb AAF82192.1 AF258464 1 (AF258464) circadian in...	24	95
gi 15237791 ref NP 197748.1 calcium-dependent protein kina...	24	95

<u>gi 9628483 ref NP_043364.1 </u>	putative [Human papillomavirus ...	<u>24</u>	<u>95</u>
<u>gi 14330439 emb CAC41022.1 </u>	(AJ318076) calcium-dependent/ca...	<u>24</u>	<u>95</u>
<u>gi 603473 dbj BAA05918.1 </u>	(D28582) calcium-dependent protei...	<u>24</u>	<u>95</u>
<u>gi 15233737 ref NP_195536.1 </u>	calcium-dependent protein kina...	<u>24</u>	<u>95</u>
<u>gi 13385928 ref NP_080709.1 </u>	RIKEN cDNA 1810057C19 gene [Mu...	<u>24</u>	<u>128</u>
<u>gi 12725178 gb AAK06220.1 AE006440.6</u>	(AE006440) competence ...	<u>24</u>	<u>128</u>
<u>gi 12518809 gb AAG59104.1 AE005622.6</u>	(AE005622) orf, hypoth...	<u>24</u>	<u>128</u>
<u>gi 2773068 gb AAB96668.1 </u>	(AF039138) UDP-glucuronosyltransf...	<u>24</u>	<u>128</u>
<u>gi 2501531 sp Q58543 YB43 METJA</u>	HYPOTHETICAL PROTEIN MJ1143...	<u>24</u>	<u>128</u>
<u>gi 14917069 sp P32157 YIIM ECOLI</u>	HYPOTHETICAL 25.3 KDA PROT...	<u>24</u>	<u>128</u>
<u>gi 1813424 dbj BAA13332.1 </u>	(D87328) HCS [Homo sapiens]	<u>24</u>	<u>128</u>
<u>gi 7768727 dbj BAA95511.1 </u>	(AP001727) holocarboxylase synth...	<u>24</u>	<u>128</u>
<u>gi 7506744 pir T16765</u>	hypothetical protein R151.4 - Caenor...	<u>24</u>	<u>128</u>
<u>gi 541118 pir S40854</u>	hypothetical 26.6K protein (kdgt-cpxa...	<u>24</u>	<u>128</u>
<u>gi 4504419 ref NP_000402.1 </u>	holocarboxylase synthetase (bio...	<u>24</u>	<u>128</u>
<u>gi 423532 pir S35092</u>	plakoglobin - mouse (fragment)	<u>24</u>	<u>172</u>
<u>gi 7304875 ref NP_038493.1 </u>	alpha-2-HS-glycoprotein [Mus mu...	<u>24</u>	<u>172</u>

Alignments

>gi|1942097|pdb|1ZWB| Structure Of Human Parathyroid Hormone Fragment 2-37, Nmr,
Structures
Length = 36

Score = 59.6 bits (133), Expect = 2e-09
Identities = 17/17 (100%), Positives = 17/17 (100%)

Query: 1 VSEIQLMHNLGKHLNSM 17
VSEIQLMHNLGKHLNSM
Sbjct: 1 VSEIQLMHNLGKHLNSM 17

>gi|13124462|sp|Q9XT35|PTH MACFA PARATHYROID HORMONE PRECURSOR (PARATHYRIN) (PTH)
gi|5359716|gb|AAD42777.1|AF130257.1 (AF130257) parathyroid hormone precursor [Macac
Length = 115

Score = 59.6 bits (133), Expect = 2e-09
Identities = 17/17 (100%), Positives = 17/17 (100%)

Query: 1 VSEIQLMHNLGKHLNSM 17
VSEIQLMHNLGKHLNSM
Sbjct: 33 VSEIQLMHNLGKHLNSM 49

>gi|11513553|pdb|1FVY|A Chain A, Solution Structure Of The Osteogenic 1-31 Fragment
The Human Parathyroid Hormone
Length = 31

Score = 59.6 bits (133), Expect = 2e-09
Identities = 17/17 (100%), Positives = 17/17 (100%)

Query: 1 VSEIQLMHNLGKHLNSM 17
VSEIQLMHNLGKHLNSM
Sbjct: 2 VSEIQLMHNLGKHLNSM 18

>gi|6980561|pdb|1BWV| The Solution Structure Of Human Parathyroid Hormone Fragmen
1-39, Nmr, 10 Structures
Length = 39

Score = 59.6 bits (133), Expect = 2e-09
Identities = 17/17 (100%), Positives = 17/17 (100%)

Query: 1 VSEIQLMHNLGKHLNSM 17
VSEIQLMHNLGKHLNSM
Sbjct: 2 VSEIQLMHNLGKHLNSM 18

>gi|209186|gb|AAA73011.1| (M64271) parathyroid hormone [synthetic construct]

gi|565142|gb|AAB31748.1| (S71759) human parathyroid hormone, hPTH [synthetic, Pepti
Synthetic Recombinant, 85 aa] [synthetic construct]
Length = 85

Score = 59.6 bits (133), Expect = 2e-09
Identities = 17/17 (100%), Positives = 17/17 (100%)

Query: 1 VSEIQLMHNLGKHLNSM 17
VSEIQLMHNLGKHLNSM
Sbjct: 3 VSEIQLMHNLGKHLNSM 19

>gi|10120514|pdb|1ET1|A Chain A, Crystal Structure Of Human Parathyroid Hormone 1-34
0.9 A Resolution
gi|10120515|pdb|1ET1|B Chain B, Crystal Structure Of Human Parathyroid Hormone 1-34
0.9 A Resolution
gi|6980572|pdb|1HPY| The Solution Structure Of Human Parathyroid Hormone Fragment
1-34 In 20% Trifluorethanol, Nmr, 10 Structures
gi|1942096|pdb|1ZWA| Structure Of Human Parathyroid Hormone Fragment 1-34, Nmr, 1
Structures
Length = 34

Score = 59.6 bits (133), Expect = 2e-09
Identities = 17/17 (100%), Positives = 17/17 (100%)

Query: 1 VSEIQLMHNLGKHLNSM 17
VSEIQLMHNLGKHLNSM
Sbjct: 2 VSEIQLMHNLGKHLNSM 18

>gi|1065314|pdb|1HPH| Human Parathyroid Hormone Fragment 1 - 37 (Hpth(1-37)) (Nmr
Structures)
Length = 37

Score = 59.6 bits (133), Expect = 2e-09
Identities = 17/17 (100%), Positives = 17/17 (100%)

Query: 1 VSEIQLMHNLGKHLNSM 17
VSEIQLMHNLGKHLNSM
Sbjct: 2 VSEIQLMHNLGKHLNSM 18

>gi|4506267|ref|NP_000306.1| parathyroid hormone [Homo sapiens]
gi|14762087|ref|XP_031173.1| parathyroid hormone [Homo sapiens]
gi|131547|sp|P01270|PTHY HUMAN PARATHYROID HORMONE PRECURSOR (PARATHYRIN) (PTH) (PA
gi|2144647|pir|PTHU parathyroid hormone precursor - human
gi|37144|emb|CAA23843.1| (V00597) reading frame PTH [Homo sapiens]
gi|190704|gb|AAA60215.1| (J00301) preproparathyroid hormone [Homo sapiens]
Length = 115

Score = 59.6 bits (133), Expect = 2e-09
Identities = 17/17 (100%), Positives = 17/17 (100%)

Query: 1 VSEIQLMHNLGKHLNSM 17
VSEIQLMHNLGKHLNSM
Sbjct: 33 VSEIQLMHNLGKHLNSM 49

>gi|1942099|pdb|1ZWD| Structure Of Human Parathyroid Hormone Fragment 3-37, Nmr,
Structures
Length = 35

Score = 56.6 bits (126), Expect = 2e-08
Identities = 16/16 (100%), Positives = 16/16 (100%)

Query: 2 SEIQLMHNLGKHLNSM 17
SEIQLMHNLGKHLNSM
Sbjct: 1 SEIQLMHNLGKHLNSM 16

gi|565142|gb|AAB31748.1| (S71759) human parathyroid hormone, hPTH [synthetic, Pepti
Synthetic Recombinant, 85 aa] [synthetic construct]
Length = 85

Score = 59.6 bits (133), Expect = 2e-09
Identities = 17/17 (100%), Positives = 17/17 (100%)

Query: 1 VSEIQLMHNLGKHLNSM 17
VSEIQLMHNLGKHLNSM
Sbjct: 3 VSEIQLMHNLGKHLNSM 19

>gi|10120514|pdb|1ET1|A Chain A, Crystal Structure Of Human Parathyroid Hormone 1-34
0.9 A Resolution
gi|10120515|pdb|1ET1|B Chain B, Crystal Structure Of Human Parathyroid Hormone 1-34
0.9 A Resolution
gi|6980572|pdb|1HPY| The Solution Structure Of Human Parathyroid Hormone Fragment
1-34 In 20% Trifluorethanol, Nmr, 10 Structures
gi|1942096|pdb|1ZWA| Structure Of Human Parathyroid Hormone Fragment 1-34, Nmr, 1
Structures
Length = 34

Score = 59.6 bits (133), Expect = 2e-09
Identities = 17/17 (100%), Positives = 17/17 (100%)

Query: 1 VSEIQLMHNLGKHLNSM 17
VSEIQLMHNLGKHLNSM
Sbjct: 2 VSEIQLMHNLGKHLNSM 18

>gi|1065314|pdb|1HPH| Human Parathyroid Hormone Fragment 1 - 37 (Hpth(1-37)) (Nmr
Structures)
Length = 37

Score = 59.6 bits (133), Expect = 2e-09
Identities = 17/17 (100%), Positives = 17/17 (100%)

Query: 1 VSEIQLMHNLGKHLNSM 17
VSEIQLMHNLGKHLNSM
Sbjct: 2 VSEIQLMHNLGKHLNSM 18

>gi|4506267|ref|NP_000306.1| parathyroid hormone [Homo sapiens]
gi|14762087|ref|XP_031173.1| parathyroid hormone [Homo sapiens]
gi|131547|sp|P01270|PTHY HUMAN PARATHYROID HORMONE PRECURSOR (PARATHYRIN) (PTH) (PA
gi|2144647|pir|PTHU parathyroid hormone precursor - human
gi|37144|emb|CAA23843.1| (V00597) reading frame PTH [Homo sapiens]
gi|190704|gb|AAA60215.1| (J00301) preproparathyroid hormone [Homo sapiens]
Length = 115

Score = 59.6 bits (133), Expect = 2e-09
Identities = 17/17 (100%), Positives = 17/17 (100%)

Query: 1 VSEIQLMHNLGKHLNSM 17
VSEIQLMHNLGKHLNSM
Sbjct: 33 VSEIQLMHNLGKHLNSM 49

>gi|1942099|pdb|1ZWD| Structure Of Human Parathyroid Hormone Fragment 3-37, Nmr,
Structures
Length = 35

Score = 56.6 bits (126), Expect = 2e-08
Identities = 16/16 (100%), Positives = 16/16 (100%)

Query: 2 SEIQLMHNLGKHLNSM 17
SEIQLMHNLGKHLNSM
Sbjct: 1 SEIQLMHNLGKHLNSM 16

>gi|7416876|gb|AAF62347.1|AF134233.1 (AF134233) parathyroid hormone [Equus caballus]
Length = 86

Score = 54.9 bits (122), Expect = 6e-08
Identities = 16/16 (100%), Positives = 16/16 (100%)

Query: 1 VSEIQLMHNLGKHLNS 16
VSEIQLMHNLGKHLNS
Sbjct: 4 VSEIQLMHNLGKHLNS 19

>gi|10181174|ref|NP_065648.1| parathyroid hormone; parathyroid hormone precursor [Mus musculus]
gi|4092930|gb|AAC99656.1| (AF066075) parathyroid hormone precursor [Mus musculus]
Length = 115

Score = 54.5 bits (121), Expect = 8e-08
Identities = 16/17 (94%), Positives = 16/17 (94%)

Query: 1 VSEIQLMHNLGKHLNSM 17
VSEIQLMHNLGKHL SM
Sbjct: 33 VSEIQLMHNLGKHLASM 49

>gi|14485761|gb|AAK63071.1|AF382952.1 (AF382952) parathyroid hormone precursor [Pero
gi|14485763|gb|AAK63072.1|AF382953.1 (AF382953) parathyroid hormone precursor [Pero
Length = 31

Score = 54.5 bits (121), Expect = 8e-08
Identities = 16/17 (94%), Positives = 16/17 (94%)

Query: 1 VSEIQLMHNLGKHLNSM 17
VSEIQLMHNLGKHL SM
Sbjct: 14 VSEIQLMHNLGKHLASM 30

>gi|1942100|pdb|1ZWE| Structure Of Human Parathyroid Hormone Fragment 4-37, Nmr,
Structures
Length = 34

Score = 54.1 bits (120), Expect = 1e-07
Identities = 15/15 (100%), Positives = 15/15 (100%)

Query: 3 EIQLMHNLGKHLNSM 17
EIQLMHNLGKHLNSM
Sbjct: 1 EIQLMHNLGKHLNSM 15

>gi|2392655|pdb|1ZWFI| Structure Of N-Terminal Acetylated Human Parathyroid Hormon
Nmr, 10 Structures
gi|2392656|pdb|1ZWGI| Succinyl Human Parathyroid Hormone 4-37, Nmr, 10 Structures
Length = 35

Score = 54.1 bits (120), Expect = 1e-07
Identities = 15/15 (100%), Positives = 15/15 (100%)

Query: 3 EIQLMHNLGKHLNSM 17
EIQLMHNLGKHLNSM
Sbjct: 2 EIQLMHNLGKHLNSM 16

>gi|229314|prf||701028A parathyrin [Bos taurus]
Length = 84

Score = 52.0 bits (115), Expect = 5e-07
Identities = 15/17 (88%), Positives = 16/17 (93%)

Query: 1 VSEIQLMHNLGKHLNSM 17
VSEIQ MHNLGKHL+SM
Sbjct: 2 VSEIQFMHNLGKHLSSM 18

>[gi|131548|sp|P01269|PTHY](#) PIG PARATHYROID HORMONE PRECURSOR (PARATHYRIN) (PTH)
[gi|2144646|pir||PTPG](#) parathyroid hormone precursor - pig
[gi|1839|emb|CAA29193.1|](#) (X05722) parathyroid hormone (AA 1-115) [Sus scrofa]
 Length = 115

Score = 52.0 bits (115), Expect = 5e-07
 Identities = 15/17 (88%), Positives = 17/17 (99%)

Query: 1 VSEIQLMHNLGKHLNSM 17
 VSEIQLMHNLGKHL+S+

Sbjct: 33 VSEIQLMHNLGKHLSSL 49

>[gi|1942098|pdb|1ZWC|](#) Structure Of Bovine Parathyroid Hormone Fragment 1-37, Nmr,
 Structures
 Length = 37

Score = 52.0 bits (115), Expect = 5e-07
 Identities = 15/17 (88%), Positives = 16/17 (93%)

Query: 1 VSEIQLMHNLGKHLNSM 17
 VSEIQ MHNLGKHL+SM

Sbjct: 2 VSEIQFMHNLGKHLSSM 18

>[gi|163647|gb|AAA30749.1|](#) (K01938) preproparathyroid hormone [Bos taurus]
 Length = 115

Score = 52.0 bits (115), Expect = 5e-07
 Identities = 15/17 (88%), Positives = 16/17 (93%)

Query: 1 VSEIQLMHNLGKHLNSM 17
 VSEIQ MHNLGKHL+SM

Sbjct: 33 VSEIQFMHNLGKHLSSM 49

>[gi|131545|sp|P01268|PTHY](#) BOVIN PARATHYROID HORMONE PRECURSOR (PARATHYRIN) (PTH)
[gi|69233|pir||PTBO](#) parathyroid hormone precursor - bovine
[gi|85|emb|CAA23439.1|](#) (V00106) preproparathyroid hormone [Bos taurus]
[gi|163643|gb|AAA30747.1|](#) (J00024) preproparathyroid hormone [Bos taurus]
[gi|163645|gb|AAA30748.1|](#) (M25082) preproparathyroid hormone [Bos taurus]
 Length = 115

Score = 52.0 bits (115), Expect = 5e-07
 Identities = 15/17 (88%), Positives = 16/17 (93%)

Query: 1 VSEIQLMHNLGKHLNSM 17
 VSEIQ MHNLGKHL+SM

Sbjct: 33 VSEIQFMHNLGKHLSSM 49

>[gi|1709894|sp|P52212|PTHY](#) CANFA PARATHYROID HORMONE PRECURSOR (PARATHYRIN) (PTH)
[gi|1085421|pir||JC4202](#) parathyroid hormone precursor - dog
[gi|558916|gb|AAA82584.1|](#) (U15662) parathyroid hormone precursor [Canis familiaris]
 Length = 115

Score = 52.0 bits (115), Expect = 5e-07
 Identities = 15/17 (88%), Positives = 16/17 (93%)

Query: 1 VSEIQLMHNLGKHLNSM 17
 VSEIQ MHNLGKHL+SM

Sbjct: 33 VSEIQFMHNLGKHLSSM 49

>[gi|8394100|ref|NP_058740.1|](#) parathyroid hormone [Rattus norvegicus]
[gi|131549|sp|P04089|PTHY](#) RAT PARATHYROID HORMONE PRECURSOR (PARATHYRIN) (PTH)
[gi|92588|pir||A05091](#) parathyroid hormone precursor - rat
[gi|56003|emb|CAA29192.1|](#) (X05721) parathyroid hormone (AA 1-115) [Rattus norvegicus]
[gi|206485|gb|AAA41979.1|](#) (K01268) preproparathyroid hormone [Rattus norvegicus]
 Length = 115

path, which is generally considered to operate in all steroid-producing tissues. Thus, a pathway involving an isolable sterol peroxide as the proximal precursor of pregnenolone or dehydroepiandrosterone could be different from the traditional one.

That steroid hormone biosynthesis in the brain is different from that characteristic of the adrenal, testes, etc., is suggested by other observations. Although Hu *et al.* (19) were able to show the conversion of cholesterol to pregnenolone by brain cells, the investigators (20) were unable to show the conversion of pregnenolone to 17-hydroxypregnenolone or to dehydroepiandrosterone. The conversion of pregnenolone to these steroids is easily demonstrable using tissue preparations from adrenals or testes. In accord with this finding, Mellon and Deschepper (5) reported that they could not detect the mRNA that coded for P450c17 (17-hydroxylase/17,20-lyase), the cytochrome that is required for C₁₉-steroid formation from C₂₁ steroids. These observations introduce the possibility that the 17-ketosteroid is made in the brain by a route different from the one ordinarily accepted for C₁₉-steroid synthesis.

Another relevant fact that supports the notion that C₁₉-steroid formation in the brain differs from that existing in rat adrenal or testes is our observation (unpublished) that treatment of extracts of these tissues with Fe²⁺ did not increase the estimated amount of either pregnenolone or dehydroepiandrosterone over that found in untreated extracts. In this respect, as Table 1 shows, the results with rat brain are clearly different.

Evidence for a naturally occurring biosynthetic pathway usually consists of demonstrating (i) the occurrence of a rational precursor in the relevant endocrine tissue and (ii) the existence of an enzymatic system for converting this precursor into the final hormonal product. If the sterol peroxide is a natural constituent of brain, and if the enzyme catalyzing the conversion of the peroxide to the final secretory product is specifically intended for that reaction, both of these criteria would be satisfied. The demonstration that an unnatural synthetic product like the 20-*tert*-butyl derivative of pregnenediol (21), when incubated with adrenal mitochondria, can readily serve as a precursor of pregnenolone does not necessarily connote the existence of a biosynthetic pathway different from that which uses cholesterol as precursor. Likewise if nonspecific enzymes (i.e., catalase) catalyze the conversion of the hydroperoxides of cholesterol (or its cyclic peroxides) to the corresponding ketosteroids, this reaction by itself would not indicate a second pathway. In the scheme in Fig. 1, both of the two relevant enzyme systems [one for the production of the precursor peroxide (reaction 2) and the other for its conversion to pregnenolone or dehydroepiandrosterone (reaction 3)] are considered to be specific for the synthesis of the ketosteroids. If only one enzyme is specific for hormone synthesis, the processes using this route could be of physiological significance. If neither enzyme is specific—i.e., the hydroperoxide is formed by autooxidation—and a nonspecific enzyme catalyzes the formation of pregnenolone from the autooxidized product, the physiological effects due to that part of the ketosteroids formed through this spurious nonspecific mechanism might be inconsequential.

An issue of particular interest in this connection is the origin of the adrenal secretory product, dehydroepiandrosterone. It is customary to consider that the pathway by which this C₁₉ product is biosynthesized resembles those leading to the formation of the C₂₁ hormones cortisol, aldosterone, and progesterone. In this traditional scheme, the first step in the biosynthesis cleaves six carbon atoms from the side-chain of cholesterol—i.e., C₂₇ → C₂₁ + C₆. In this process the C₂₁ fragment can be considered to be an obligatory precursor of the C₁₉ hormones—i.e., C₂₁ → C₁₉ + C₂. If a pathway for the formation of dehydroepiandrosterone using as the proximal

precursor either the 17-hydroperoxide or the 17,20-cyclic peroxide derivative of cholesterol exists, the side-chain cleavage product that would result from this conversion possibly contains eight carbon atoms. An intensive search for a C₈ fragment accompanying the biosynthesis of a C₁₉ steroid from cholesterol was made about a quarter of century ago (22–24), but none was found. If the path cholesterol → cholesterol peroxide → dehydroepiandrosterone does exist in the brain or even in the steroid-producing endocrine glands, then it would undoubtedly be associated with its own regulatory system (trophic factors, etc.) and would represent a new aspect of steroidogenesis.

The possibility that pregnenolone and dehydroepiandrosterone and other ketosteroids play a role as neurotransmitters has recently evoked much activity (25). The results of this study suggest that other steroidal constituents exist in brain in sensible amounts. This introduces the possibility that these unidentified relatives may also serve neuronal functions. These compounds have been detected by their conversion to the two known steroids, but it remains to be determined whether they serve merely as precursors or whether they also have physiological significance.

This work was supported from funds provided by the Institute for Health Sciences of the St. Luke's-Roosevelt Hospital Center.

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L1 61 PTH AND (1-27)

=> D 7

L1 ANSWER 7 OF 61 MEDLINE

AN 97312907 MEDLINE

DN 97312907 PubMed ID: 9169348

TI Altered regulation of parathyroid hormone secretion by calcium in pregnant and lactating rats.

AU Schultz V L; Boass A; Garner S C; Toverud S U

CS Department of Pharmacology, School of Medicine, University of North Carolina at Chapel Hill, USA.

NC HD-12496 (NICHD)

SO JOURNAL OF BONE AND MINERAL RESEARCH, (1997 Jun) 12 (6) 903-8.
Journal code: 130; 8610640. ISSN: 0884-0431.

CY United States

DT Journal; Article; (JOURNAL ARTICLE)

LA English

FS Priority Journals

EM 199708

ED Entered STN: 19970825

Last Updated on STN: 19970825

Entered Medline: 19970812

=> S PTH AND (1-27)AND HUMAN AND DESAMINO

L2 0 PTH AND (1-27) AND HUMAN AND DESAMINO

=> S PTH AND (1-27) AND HUMAN

L3 37 PTH AND (1-27) AND HUMAN

=> D 7

L3 ANSWER 7 OF 37 MEDLINE

AN 97073022 MEDLINE

DN 97073022 PubMed ID: 8915770

TI Transforming growth factor-beta stimulates bone resorption in neonatal mouse calvariae by a prostaglandin-unrelated but cell proliferation-dependent pathway.

AU Lerner U H
CS Department of Oral Cell Biology, University of Umea, Sweden.
SO JOURNAL OF BONE AND MINERAL RESEARCH, (1996 Nov) 11 (11) 1628-39.
Journal code: 130; 8610640. ISSN: 0884-0431.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 199703
ED Entered STN: 19970321
Last Updated on STN: 19970321
Entered Medline: 19970311

=> D 9

L3 ANSWER 9 OF 37 MEDLINE
AN 95086582 MEDLINE
DN 95086582 PubMed ID: 7994333
TI [Convulsions and neonatal hypoparathyroidism revealing maternal hyperparathyroidism].
Convulsions et hypoparathyroidie neonatales revelant une hyperparathyroidie maternelle.
AU Brisse F; Breton D; Gagey V; Cheron G
CS Unite de pediatrie generale, hopital Necker-Enfants-Malades, Paris, France.
SO ARCHIVES DE PEDIATRIE, (1994 Mar) 1 (3) 255-9.
Journal code: BWH; 9421356. ISSN: 0929-693X.
CY France
DT Journal; Article; (JOURNAL ARTICLE)
LA French
FS Priority Journals
EM 199501
ED Entered STN: 19950126
Last Updated on STN: 19950126
Entered Medline: 19950119

=> S PARATHYROID HORMONE AND (1-27)

L4 77 PARATHYROID HORMONE AND (1-27)

=> S PTH AND (1-26)

L5 60 PTH AND (1-26)

=> S PTH AND (1-25)

L6 3746 PTH AND (1-25)

=> S PTH AND (1-24)

L7 75 PTH AND (1-24)

=> S PTH AND (1-25)

L8 3746 PTH AND (1-25)

=> D 200

L8 ANSWER 200 OF 3746 MEDLINE

AN 1999111473 MEDLINE
 DN 99111473 PubMed ID: 9893121
 TI Proliferation of parathyroid cells negatively correlates with expression
 of parathyroid hormone-related protein in secondary parathyroid
 hyperplasia.
 AU Matsushita H; Hara M; Endo Y; Shishiba Y; Hara S; Ubara Y; Nakazawa H;
 Suzuki N; Kawaminami K; Kido T; Li Q; Grimelius L
 CS Departments of Pathology, Endocrinology, Nephrology, Endocrine Surgery,
 and the Epidemiological Research Center, Toranomon Hospital, Minatoko,
 Japan.. hiroshi.matsushita@toranomon.gr.jp
 SO KIDNEY INTERNATIONAL, (1999 Jan) 55 (1) 130-8.
 Journal code: KVB; 0323470. ISSN: 0085-2538.
 CY United States
 DT Journal; Article; (JOURNAL ARTICLE)
 LA English
 FS Priority Journals
 EM 199902
 ED Entered STN: 19990301
 Last Updated on STN: 19990301
 Entered Medline: 19990217

=> D 1500

L8 ANSWER 1500 OF 3746 MEDLINE
 AN 83104993 MEDLINE
 DN 83104993 PubMed ID: 6337052
 TI Multiple hormonal mechanisms for the control of collagen synthesis in an
 osteoblast-like cell line, MMB-1.
 AU Rosen D M; Luben R A
 NC AM-26448 (NIADDK)
 DE-00057 (NIDCR)
 DE-05476 (NIDCR)
 SO ENDOCRINOLOGY, (1983 Mar) 112 (3) 992-9.
 Journal code: EGZ; 0375040. ISSN: 0013-7227.
 CY United States
 DT Journal; Article; (JOURNAL ARTICLE)
 LA English
 FS Abridged Index Medicus Journals; Priority Journals
 EM 198303
 ED Entered STN: 19900318
 Last Updated on STN: 20000303
 Entered Medline: 19830324

=> S VSEIQLMHNLGKHLNSM
 L9 0 VSEIQLMHNLGKHLNSM

=> S VAL SER GLU ILE GLN LEU MET HIS ASN LEU GLY LYS HIS LEU SER MET
 L10 0 VAL SER GLU ILE GLN LEU MET HIS ASN LEU GLY LYS HIS LEU SER MET

=> S VALSERGLUILEGLNLEUMETHISASNLEUGLYLYSHISLEUSERMET
 L11 0 VALSERGLUILEGLNLEUMETHISASNLEUGLYLYSHISLEUSERMET

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L12 197 VAL AND SER AND GLU AND ILE AND GLN AND LEU AND MET AND HIS AND
 ASN AND LEU AND GLY AND LYS AND HIS AND LEU AND SER AND MET

=> D 110

L12 ANSWER 110 OF 197 BIOSIS COPYRIGHT 2001 BIOSIS
AN 1998:453862 BIOSIS
DN PREV199800453862

TI Quantitative assessment of enzyme specificity in vivo: P2 recognition by
Kex2 protease defined in a genetic system.

AU Bevan, Alison; Brenner, Charles; Fuller, Robert S. (1)

CS (1) Dep. Biochemistry, Stanford Univ. Sch. Med., Stanford, CA 94305 USA

SO Proceedings of the National Academy of Sciences of the United States of
America, (Sept. 1, 1998) Vol. 95, No. 18, pp. 10384-10389.

ISSN: 0027-8424.

DT Article

LA English

=> S L12 AND PTH
L13 0 L12 AND PTH